

Francis (S.W.)

MEDICAL SERIES.

No. 3.

CURIOUS FACTS,
CONCERNING
MAN AND NATURE:

Box 8.

WITH A FEW PRACTICAL SUGGESTIONS

ON OTHER SUBJECTS,

BY DR. SAMUEL W. FRANCIS.

Fellow of the N. Y. Academy of Medicine.

PUBLISHED BY CHARLES E. HAMMETT, JR.,
NEWPORT, R. I.

1874.

Presented

By Dr. SAMUEL W. FRANCIS,

NEWPORT,

Rhode Island.

Box "240" P. O.

Please acknowledge.

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I.

MAN AND NATURE.

In the Bible every agent appears and acts as a self-subsisting individual; each has a life of its own and yet all are one life.
[Coleridge.]

In the year 1862, while writing a psychological romance entitled "Inside Out" the following thought was introduced by me on page 323 :—"I looked into the real of life, read works on stones; studied out the vast course of created things, and saw in each existing specimen a UNITY of purpose, the great *oneness* of an earthly system. Taking man, for instance, as the best type of perfect build, a circulation caught my eye; I followed it and found the heart. A round of duty began there. It went through every little scheme and then returned to be renewed. I studied botany and found the same—the sap is blood and leaves the lungs. The vegetable kingdom now completed, I pierced the rocks and found analogies that truly stunned by comparison.—Shells from the watery deep revealed new lessons, but remained subservient to that *ONENESS* of perfecting skill." This idea continued to grow till I became satisfied that, even as the handicraft of different workmen can be distinguished, should more than one be employed on the same structure, so the expression of the Almighty's presence may be seen in every thing He, in His wisdom has created. There exists so much variety of form which at the same time is subservient to an imitative or rather representative atmosphere, that one grand thought alone fills the breast of the Christian philosopher, namely, the great "I Am," has stamped his autograph on every thing under the Sun.

It is a remarkable fact that many, if not all the parts of the human body, are copied in some form or other, in the wide field of nature. Fruits, Vegetables and Flowers seem to imitate man, as to some portion of his shape or claim at least one representative of his organization. Many articles of food, not at present recognizable to the popular mind, will be found, in time, to have been made in the image of other and inferior animals whose peculiarities and anatomy have not as yet been compared on this principle.

A list of a few of the most remarkable resemblances will act as a stimulus to other minds and in the progress of investigation lead to a complete article on this subject.

The human hair, long, lank and dark finds an equivalent in the stringy seaweed and the silk of corn ; while the "curly pate" is found in nature under the shape of moss or the delicate twistings of vine tendrils, celery tops, &c. The Cocoanut is an excellent specimen of the human skull—hard, round and not easily broken and closely resembling the monkey in whose country it is found.

Should the face of a skeleton be desired, by taking a large sponge and turning it backwards to you, a surprising likeness to the hollow eyes, sunken cheek and broken nose will be seen, while that peculiar appearance of bony gone-ness together with many of the foramina will present to view some singular phenomena suggestive to the student's mind.

For the brain as to lobes and shape, the meat of the English Walnut affords a wonderful analogy—the two hemispheres, with many of their convolutions, being plainly discernable—on opening this nut carefully you can almost fancy you see the "*iter a tertio ad quartum ventriculum*;" there are suitable places for commissures, lateral sinuses and a certain locality which in the human head is occupied by the circle of Willis.

Plums, black cherries, many other fruits, and seeds of all sizes and colors, convey an excellent image of the eye ; while certain almonds and other nuts form a variety of noses ludicrous

and suggestive, all going more or less to prove the freaks of nature who in her boundless freedom is still subservient to the laws of unity.

The red faced, pimply pumpkin bears a strong resemblance to the apoplectic gourmand and even boys will make a Jack o' lantern out of one for an evening's sport. Two rows of corn supply the deficiency of teeth to a nicety, furnishing incisors; and, on certain occasions, bicusps and molars are not absent.

An opened oyster and shell are the exact type of the human ear, its lobe included. Apples furnish the ruddy health and shape of a normal cheek. While many chubby squashes are good sized necks. The shape of almost any man's body may be found in the various kinds of mammoth pumpkins; and in the healthy undulations of the female form, the pear furnishes a beautiful outline. Pomegranates, Oranges and Lemons are the breasts of the earth, made to be "drawn," while a perfect nipple as to color and shape is recognized in the delicate raspberry. The shoulders and arm proper are seen in the long gourd, while certain beets represent the arm so well that the peculiar fold and indentation of the skin about the olecranon process, on extension can be seen.

Scrub willows and the growth of celery remind us of the extended hand with fingers spread out, and, not even unmindful of the human nail; on eating the artichoke, which we pull to pieces before biting it, an excellent nail, long and white is found. Watermelons take the size and proportions of the thigh and mangel-wurtzel beets have the form of the leg.

The human heart finds a likeness in the German turnip; but more particularly in the egg-plant, whose color and shape strongly resemble it, while on making a section of each, by drawing a little on the imagination, valves and even the chordæ tendineæ, may be discovered in subtle form. The whole system of the ramification of trees is fashioned after the manner of the bifurcation of the bronchial tubes—and, on adding leaves, the analogy of lungs can be closely followed out.

Take a photograph of a full grown tree in winter and compare it with a careful drawing of the arterial or nervous distribution of the trunk of man and his extremities, and the similarity of the two carries conviction with it.

Sap is the blood of plants; pure wine the blood of grapes, claret taking even its very color. While coral, at one time the dividing line between the animal and vegetable kingdom, appears to the eye a collection of petrified arteries.

In the bony structure we find a close resemblance between a section of wood, piece of vertebræ, a slice of the large red beet, even the scale of the Haddock, (magnified), or a spider's web; one and all coming under the principle of circles and more or less radiation.

In the matter of the internal organs the similarity is as complete—for what is the crooked neck squash but a vegetable stomach?

The long cucumber is a good substitute for the colon; and small gourds, beans, squashes and tamarinds &c., are no mean likenesses of the duodenum, jejunum, coecum, rectum and even glands. In fact most of this class of earthly growths act in tableaux as primitive livers and intestinal canals. What can be more exact in its relations to the organ whose name it bears than the haricot or kidney bean? Its outward appearance first attracts our attention, we next find a supra renal capsule, and on making a section of it discover incipient uriferous tubes and promises of malpighian tufts.

The pudenda are suggested by cabbages, curled lettuce, &c. The penis of man and other animals, being the instrument of fecundation, is widely copied in nature under a vast variety of forms; many roots, seeds and fruits taking its shape, as from them alone their species are reproduced. The more prominent are the acorn, long turnip, parsnip, radish, carrot, asparagus, and above all the banana; for cut one longitudinally and you can find the meatus, urethra, and even an attempt at the fossa navicularis marvellous indeed in their analogical bearings.

The shape of a fresh fig strongly resembles a young scrotum in many of its details. In the organs of generation, as found in woman, we can trace almost a mirrorlike reflection in the glory pea, for there may be seen the meatus urinarius, vestibulum, hymen, clitoris, and two labia (the latter also well represented in the clam). The potatoe and pear are cast in the mould that shaped the uterus. Some of them are so exact that if photographed, by the side of a uterus, it would be difficult to tell them apart. Several months ago I placed a potatoe—I think the “early rose,” in a *blue* hyacinth glass, as I had ascertained by experiments in 1870-1, that bulbs grow better in blue than green glasses.—This potatoe I half covered with water and was pleased to see, in the course of time, besides a luxuriant growth of leaves, &c., some little potatoes come into existence—say about eight. They varied in size from a pea and filbert to a pigeon’s egg. On cutting one or two open they were found to possess all the qualities of a naturally grown potatoe. I have lately placed one of *them* in a glass and, as it has commenced to sprout, have great hopes of bringing out a second generation, raised entirely from water and *no* earth. I also believe that the refuse stalk, leaves, shell, etc., of each plant, like Corn, &c., are excellent manure for its own growth.

The idea of Cupid’s wings and those of other creatures of the fancy undoubtedly came from the separation of the grain of a bean after it has burst and risen from the earth; for as the stalk grows up between its opened sides, a marvellous resemblance to miniature wings will appear.

The Ring of Glory painted around the heads of saints, by the old masters, vividly recalls to mind the circle of Coin stamped in honor of Cæsar, Alexander or Liberty. Take the cup that holds the acorn and you have a perfect model of one of the smoking pipes of the Chinese, with its stem and peculiarly placed bowl. There is an Italian grass much used in boquets, so soft and downy to both touch and sight, that the ostrich might claim it as one of its finest feathers. A complete dissection of the uterus and fallopian tubes presented to view, resembles strongly the outlines of a crab in some instances, and in others a bat.

A tomato is the counterpart of the anus seen particularly well in the horse after defecation, and the *Rhodanthe Maculata* calls the same locality up to mind. So also, in most of the eastern shells that peculiar blush of the anus is plainly visible, while vaginas may be seen by the score. The testicles and ovaries are in reality the nuts of nature, often as regards size, shape & color.

Mown grass and a shaved beard speak for themselves. Apple blossoms and the white moth are one to the eye at a distance. Whortleberries and the faces of sheep, goats, &c., possess a marked similarity, and so on to the end of the chapter.

“As all nature’s thousand changes
But one changeless God proclaim,
So in Art’s wide kingdom ranges
One sole meaning, still the same:
This is Truth, eternal Reason,
Which from Beauty takes its dress,
And, serene through time and season,
Stands for aye in loveliness.”

If Linnæus, by comparing the relaxed feet of birds with the closing of leaves at night from the absence of light, deduced the idea that plants not only rested but slept, how many practical theories of importance might be derived from the above statement of a few facts which any ordinary observer of nature can test at a glance as to their truthfulness. And this leads to one other thought which can be expressed in brief as follows, that many practical ideas have been adopted by man from the study of nature.

Chloroform comes from the ant—forma. The duck bill produced a forceps of the same name. The hog suggested the plough. The butterfly is a perfect hinge. There is a plant that catches flies like a mousetrap. The trumpet flower has been copied by musicians, and reversed, makes a good funnel. The toadstool is a vegetable umbrella. Many pitchers are taken from the plant of that name. Man has never invented a color that is not in clouds or flowers so beautifully called “the gallantry of nature:” and there is scarcely if any geometrical figure, from Hogarth’s line of beauty to the curve of Carus, that may not be discovered in forest or field. Ships in olden

times were only wooden ducks. Fungus growths on trees are natural brackets. More than half the Egyptian hieroglyphics of the 16th century B. C. were composed of animals or the members of man's body, hands, feet and arms. And Heraldry from the time of Ratisbon, MX. followed the same example. There is an eastern animal something like the monkey that taps and taps for a living, with one or more of his fingers. Surely percussion existed before doctors! There is not a sound, note or key in music that may not be found among some of the countless animals created by the Almighty, from the plaintive cry of the whippoorwill, the whistle of the quail, and the roar of the Lion to the buzz of the insect, the song of the nightingale and the hiss or rattle of the snake,—either in single melody or in the beautiful harmony of a union of voices, one and all going up to Heaven as an appeal for protection, or in gushing praise for happy health. The Rooster crows in $\frac{3}{4}$ time and "Bob White" whistles a short gallop in $\frac{2}{4}$ time. Listen to that wonderful masterpiece the "Pastoral Symphony" of Beethoven, or Von Veber's "Dedication of Sound" and if there is music in your soul, you will be convinced that man is only an imitator and the ways of God are wonderful indeed and past finding out. Many diseases have their origin in minute animals, itch, &c. There is a little sharpshooter that loads its gun with water and brings down insects. We also find an animal that swims about and drops its little anchor with flukes and parts strongly resembling the one now adopted in our navy. The ball and socket joint and many other means of union with motion are derived from anatomy. Many Buds when blooming, are nothing more nor less than birds of beautiful plumage suspended by their bills.

Bees and wasps, &c., taught us the hypodermic injection; and the finest fan we can use for refreshment, not ornament, is that of the Chinese leaf. Sir Joseph Paxton conceived the idea of supporting the roof of the Crystal Palace, London, from a careful study of the leaf of the Victoria Regia. "Go to the ant thou sluggard, consider her ways and be wise," has more significance than conceited man is capable of appreciating by any superficial glance.

If the back of a turtle or tortoise is stood up before the student it at first resembles neat shingling ; but if the outlines are followed from above downwards, he will at once see the marked similarity between that and the head-dress of the Egyptian Cleopatra and the Eastern women of that day. It was because in olden, meditative times, observation had more followers than origination. Long walks, much reflection and silent revery bared to view the secrets of many things that to the casual observer seemed merely the result of cause and effect. Education teaches us to see beyond the surface. Taking as my standpoint the aphorism, that all things were created for some good purpose, it is my firm conviction that the mosquito was created for the purpose of driving man from malarial districts : for I do not believe that in nature any region where chill and fever prevail can be free from this little animal. Now if man will not go, after the warning is given in humming accents, then the mosquito injects hypodermically a little liqu'd which answers two purposes—firstly to render the blood thin enough to be drawn up through its tube, and secondly in order to inject that which possesses the principles of QUININE! This idea I published in a work entitled “Life and Death,” page 210—March, 1871 ; a few lines will suffice—“The time will come when it will be publicly acknowledged that the little fluid they (mosquitoes) inject into your blood, contains certain specific properties for different diseases. To prove that I am right, let any skillful chemist test the powerful drop contained in a mosquito's sack, and he will find many of the properties of Quinine.”

This theory was ridiculed at first by many, but it was with emotions of great pleasure I lately learned that about eighteen months after I had made this statement, some German Philosophers actually obtained the liquid from mosquitoes and by a careful analysis, discovered that it contained the “principles of QUININE.” How truly appropriate are Pope's lines :

“All are but parts of one stupendous whole
Whose body *nature* is, and *God the Soul*.”

AN AMERICAN PROPHECY FULFILLED.

(From the Newport, R. I. Mercury, Nov. 23, 1867.)

The Philadelphia Medical & Surgical Reporter, for January 9th, 1864, (Vol. XI., No. 2,) page 27, contains the following remarkable communication from Dr. SAMUEL W. FRANCIS, of New-York, suggesting the invention of a new and improved INTROSCOPE, which explains itself.

"There is one additional statement, which, though what Terence would designate as 'homunculus,' I will venture to predict that it may be seconded.

It is to the following effect, that ere long so great improvement will be made in the Microscope that, on stripping the body of any person, and artificially illuminating him by electro-magnetism, or otherwise, and by looking through the countless multiplied lenses of the *improved* Microscope, the workings of his organs may at once be studied, the complex localities of the nervous system effectually understood, and a practical Chart of normal and abnormal differences easily procured. For instance, by aid of a powerful glass, we may *now* follow, for a short space, the circulation of a frog's foot. In a few years a thicker membrane than the web will be as readily pierced, and, eventually, "seeing through a mill-stone" will not be so extravagant an idea as at present we are led to suppose. A fit climax for the previous assertion is, that subsequently, by a careful adjustment, the workings of the brain may be distinguished, and, as a reward for labors past, the scientific student will at length be permitted to 'See Thought.'"

Impossible as this might at first seem, a Frenchman of much ingenuity has already succeeded in verifying Dr. Francis' prediction, as may be seen by the following extract from the Philadelphia Medical and Surgical Reporter Nov. 9, 1867, Vol. xvii, No. 19:—

"Splanchnoscopy. If one holds an egg before a bright light, it is seen to be translucent. If a bright light were introduced into the stomach, we could obtain a tolerably fair view of its anterior and lateral parietes, by a similar property of translucency. Impossible as this demonstration would seem to be, it has been successfully performed by M. Milliot, of Paris. He introduces into the stomach glass tubes of small calibre, containing two platinum wires, connected with the electrodes of a powerful battery—the apparatus of Middendorpf he

prefers—and thus kindles an intense light in the cavity.—Tumors in the abdominal walls can thus be demonstrated, indurations and ulcerations detected, and indeed to what extent diagnosis may not be facilitated, it were premature to say.”

III.

SYPHILINE.

“INTERDUM STULTUS BENE LOQUITUR.”

(From the Medical and Surgical Reporter, Philadelphia, Oct. 10, 1863.)

TO THE EDITOR, &c.

Though a learned man, of deep penetration once remarked that “he who coins words, coins himself out of existence,” I feel confident that you will excuse my originating the term “Syphiline,” and on hearing the case, agree that it is a useful and comprehensive expression. In very many of our medical and surgical terms the ending of a word seems as it were the genus, while the penult, antepenult, etc., indicate the place, e. g., “itis,” signifies inflammation, and the word prefixed to this, at once declares the locality affected: for instance, Bronchitis, Pleuritis, Pneumonitis, Hepatitis, etc. *Algia* means pain, hence Neuralgia, Otalgia, Odontalgia, etc., etc. Now, moreover, in medicine we have adopted the termination “ine,” as an indication of the active principle of an herb, etc., when used as a remedy, viz.: Codine, Morphine, Strychnine, Bromine, Iodine, etc., etc.

Again, it has been the custom to name a locality, disease, or even remedy, after its resemblance to something generally known and strictly forcible and conclusive; for example, Hernia, a branch jetting out; Pelvis, a basin; the muscle gracilis from “slender,” “thin,” etc., etc.

Now, if Bromine comes from Bromos, a stench, and means the active principle of a smelling substance; if Morphine is named after Morpheus, and signifies the active principle of sleep; if Pyene is the active principle of Pus; and Syphilis is so called from the Greek word “sus,” a hog; or “sipalos,” shameful, etc., why, I would respectfully ask, should we not have a comprehensive term to indicate

the active principle of "hog," filth, dirt, or shame? Moreover there is now wanting a term to express briefly this poison. When speaking of this disease the surgeon, at present, is forced to employ something like the following, "the syphilitic poison," or "the virus of pox," etc.

SAM'L. W. FRANCIS, M. D.

Newport, R. I., Sept. 25, 1863.

IV.

"TRANSPARENT TREATMENT."

A new invention for the cure of Burns and other affections of the extremities (A GLASS GLOVE OR BOOT.)

BY DR. SAMUEL W. FRANCIS.

(From the Philadelphia Medical & Surgical Reporter, Vol. XVIII, No. 5, Feb. 1, 1868.)

The scalded arm is placed at once in the Glass Glove; each finger finding its own division, which, though separate, is joined externally like a mitten, to prevent breakage; and water dressing, lime water, or kreasote water, etc., allowed to flow in from the upper stock cock; an india-rubber band, or its equivalent, preventing its exit. By this means every portion is effectually bathed in the fluid used, and the attending physician is enabled to examine, at all times, the injured member without disturbing it, or exposing the surfaces to the action of the air. If it be desirable at any moment to draw off the water, &c., by turning the stock-cock at the end of the little finger, it at once flows freely. Glass can be made sufficiently strong to prevent its being broken by ordinary usage, as it is very desirable that the limb be kept still. Three sizes would fit almost any grown patient, and for children, a smaller arm could be in readiness. I claim, moreover, that by the use of this glove, or boot, if it be the leg that is injured, water or its equivalent could be forced in by a pump, with sufficient power to produce pressure, which at times is very desirable. Besides this, a new plan of treatment could be adopted, which might at first seem beyond reason. I speak of introducing gases, vapors and their equivalents, for the cure of burns, ulcers, and similar affections. Many arms are materially injured by the adhesion of

the bandages to the sores : and not infrequently sphacelation is found to have commenced upon the surgeon's removing the covering from the flayed hand. These and many other thoughts arise in connection with the benefit of this "transparent treatment", but enough has been said for practical purposes, and I would feel grateful to hear the result of any case that has been submitted to this plan, which admits of many modifications.

Newport, R. I. Nov. 25, 1867.

V.

VENTILATION OF HOSPITALS.

"It has been proposed to have small, open, tin gutters attached to the upper and lower part of the sides of the walls of each room, with a constant supply of fresh water running in them, the argument being that the water absorbs and carries off a great amount of impure air. Samuel W. Francis, M. D., of New York, is the originator of an elaborate plan of this description, intended for hospitals." (Hospital Hygiene, by V. Mott Francis, M. D., 1859, page 169.)

VI.

PELVIMETRY.

"When the true conjugate is not obstructed, the instrument devised by my friend, Dr. Samuel W. Francis, has given me satisfaction."

OBSTETRIC CLINIC.—A practical contribution to the study of obstetrics, and the diseases of women and children, by George T. Elliot, Jr., M. D., &c., N. Y. D. Appleton & Co., Page 263.

VII.

SELF-OPENING COFFINS AND AN ALARM TELEGRAPH.

(An effectual method of rescuing a person, if buried alive.)

Invented by DR. S. W. FRANCIS, 1868.

I would suggest that a coffin be closed by spring lids, merely held down by two catches. These are connected with both of the arms (which are crossed,) of the supposed dead person. Attached to this wire is another long one, which comes out of the coffin and is joined to a little telegraph wire, which is run into every vault. Now, if the person buried, wakes up out of a trance,—instead of going through all the never to be known hopeless agonies of mind and body—their first impulse, as a proof of returning consciousness, is to move their hands, which act presses the springs so that the catches let go, the coffin-lid flies open, and the victim of circumstances, can sit up. In the mean time the telegraph wire has rung a bell in the keeper's lodge, and called his attention to the alarming fact that "Vault No. 67 has come to life—send assistance." This invention is important to the public, and I sincerely hope that it may be adopted by some large corporation, and prove of assistance in rendering the horrors of such burials less likely to occur—an event that might possibly happen under the most cautious arrangements. The entire expense of the application of this idea would be but a very few dollars, and add much to ease the minds of the bereaved. I would also suggest that the vault door shut with a spring-lock that opens with a key on the outside, and a handle on the inside. Of course there should be a sufficient number of air holes in the coffin lid.

